CLAIMS

25°C.

What is claimed is:

1. A catalyst prepared by:

providing a zeolite carrier;

providing a cupric salt aqueous solution; and

defining a copper zeolite catalyst by carrying out an ion

exchange reaction between copper ions and said zeolite carrier in said

cupric salt aqueous solution at a temperature of from about 4°C to about

- 2. The catalyst of claim 1 wherein said zeolite carrier has a silicon/aluminum mole ratio of from about 14 to about 95.
- 3. The catalyst of claim 1 wherein said copper zeolite catalyst comprises a copper content of from about 0.1% to about 10.0% by weight.
- 4. The catalyst of claim 3 wherein said zeolite carrier has a silicon/aluminum mole ratio of from about 14 to about 95.
- 5. The catalyst of claim 1 wherein said defining a copper zeolite catalyst further comprises the step of calcining said copper zeolite catalyst at a temperature of from about 300°C to about 700°C.
- 6. The catalyst of claim 5 wherein said zeolite carrier has a silicon/aluminum mole ratio of from about 14 to about 95.

- 7. The catalyst of claim 5 wherein said copper zeolite catalyst comprises a copper content of from about 0.1% to about 10.0% by weight.
- 8. The catalyst of claim 7 wherein said zeolite carrier has a silicon/aluminum mole ratio of from about 14 to about 95.
 - 9. A catalyst prepared by:

providing a zeolite carrier having a silicon/aluminum mole ratio of from about 14 to about 30;

providing a cupric salt aqueous solution having a concentration of from about 0.001 molar to about 10 molar;

defining a copper zeolite catalyst by carrying out an ion exchange reaction between copper ions and said zeolite carrier in said cupric salt aqueous solution at a temperature of from about 4°C to about 25°C; and

calcinating said copper zeolite catalyst at a temperature of from about 300°C to about 700°C.

- 10. The catalyst of claim 9 wherein said cupric salt aqueous solution is copper sulfate, copper nitrate, copper acetate or copper chloride.
- 11. The catalyst of claim 9 wherein said copper zeolite catalyst comprises a copper content of from about 2.5% to about 3.5% by weight.
 - 12. A process for preparing a catalyst, comprising the steps of: providing a zeolite carrier;

providing a cupric salt aqueous solution;

defining a copper zeolite catalyst by carrying out an ion exchange reaction between copper ions and said zeolite carrier in said cupric salt aqueous solution at a temperature of from about 4°C to about 25°C; and

calcinating said copper zeolite catalyst.

- 13. The process of claim 12 wherein said zeolite carrier has a silicon/aluminum mole ratio of from about 14 to about 95.
- 14. The process of claim 12 wherein said copper zeolite catalyst comprises a copper content of from about 0.1% to about 10.0% by weight.
- 15. The process of claim 14 wherein said zeolite carrier has a silicon/aluminum mole ratio of from about 14 to about 95.
- 16. The process of claim 12 wherein said calcining said copper zeolite catalyst comprises calcining said copper zeolite catalyst at a temperature of from about 300°C to about 700°C.
- 17. The process of claim 16 wherein said zeolite carrier has a silicon/aluminum mole ratio of from about 14 to about 95.
- 18. The process of claim 16 wherein said copper zeolite catalyst comprises a copper content of from about 0.1% to about 10.0% by weight.
 - 19. The process of claim 12 wherein said cupric salt aqueous

solution is copper sulfate, copper nitrate, copper acetate or copper chloride having a concentration of from about 0.001 molar to about 10 molar.

- 20. The process of claim 19 wherein said zeolite carrier has a silicon/aluminum mole ratio of from about 14 to about 95.
- 21. The process of claim 19 wherein said calcining said copper zeolite catalyst comprises calcining said copper zeolite catalyst at a temperature of from about 300°C to about 700°C.
- 22. A process for removing nitrogen oxides from a gaseous medium, comprising the steps of:

providing a catalyst prepared by providing a cupric salt aqeous solution, providing a zeolite carrier, and causing an ion exchange reaction between copper ions and said zeolite carrier in said cupric salt aqueous solution at a temperature of from about 4°C to about 25°C;

defining a gaseous mixture by providing a reducing agent and mixing said reducing agent with said gaseous medium; and passing said gaseous mixture through said catalyst.

- 23. The process of claim 22 wherein said reducing agent is ammonia or urea.
- 24. The process of claim 22 wherein said cupric salt aqueous solution is copper sulfate, copper nitrate, copper acetate or copper chloride having a concentration of from about 0.001 molar to about 10 molar.

- 25. The process of claim 22 wherein said zeolite carrier has a silicon/aluminum mole ratio of from about 14 to about 95.
- 26. The process of claim 22 wherein said catalyst has a copper content of from about 0.1% to about 10.0% by weight.
- 27. The process of claim 22 wherein said catalyst is prepared by further calcining said catalyst at a temperature of from about 300°C to about 700°C.
- 28. The process of claim 22 wherein said passing said gaseous mixture through said catalyst comprises passing said gaseous mixture through said catalyst at a temperature of from about 150°C to about 500°C and a spatial velocity of from about 1000 hr⁻¹ to about 400,000 hr⁻¹.
 - 29. A copper zeolite catalyst comprising:

a zeolite carrier having a silicon/aluminum mole ratio of from about 14 to about 95; and

copper provided on said zeolite carrier in a quantity of from about 0.1% to about 10.0% by weight.

- 30. The copper zeolite catalyst of claim 29 wherein said zeolite carrier has a silicon/aluminum mole ratio of from about 14 to about 30.
- 31. The copper zeolite catalyst of claim 29 wherein said copper is provided on said zeolite carrier in a quantity of from about 2.5% to about 3.5% by weight.

- 32. The copper zeolite catalyst of claim 31 wherein said zeolite carrier has a silicon/aluminum mole ratio of from about 14 to about 30.
- 33. A zeolite carrier comprising a silicon/aluminum mole ratio of from about 14 to about 95.
- 34. The zeolite carrier of claim 33 wherein said silicon/ aluminum mole ratio is from about 14 to about 30.